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BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE
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THE OFFICE OF PLANT PROTECTION AND QUARANTINE

Volume XII Number 2

DEPARTMENT OF
PLANT INDUSTRY
UNITED STATES DEPARTMENT OF AGRICULTURE

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DISEASES OF CEREAL CROPS IN ILLINOIS

The following statement was sent in by G. L. Stout, July 9:

"Light infections of stem rust (Puccinia graminis) have been prevalent on winter wheat throughout southern Illinois for the past three or four weeks. Leaf rust (P.. triticina) was very scarce on wheat in southcentral Illinois three to four weeks ago, but is now quite prevalent and really abundant. Wheat is now all cut in southern quarter of state. There are traces of crown rust (P. coronata) on oats in central Illinois, and it is more severe in the southern counties.

"I have found severe infections of barley stripe (Helminthosporium gramineum) on spring barley in southcentral Illinois (10 to 20 per cent). This crop is more abundant this year here on account of wheat failures from winter killing.

"The last four weeks in Illinois have been quite wet, especially in the extreme south."

WHEAT DISEASES IN MONTANA

"Wheat is just ripening. Four fields showed about 10 per cent bunt (Tilletia) but other fields showed very little. Traces of red rust (Puccinia triticina) and powdery mildew (Erysiphe graminis) are present in many fields.

"Yellow rust (P. glumarum) recently appeared in the Jones Fife wheat in the plots at Bozeman. Dr. C. W. Hungerford found this disease in the wheat at Vancouver, British Columbia, on June 25, 1928." (P. A. Young, July 7)

WHEAT STEM RUST (PUCCINIA GRAMINIS)

Massachusetts: Barberry hedges on which abundant aecia have formed during previous years (except 1926) not a single aecium has been observed. Aecia have been collected in Vermont about 18 miles north of the Massachusetts line. Collections of teliospores collected and stored in 1926 did not germinate this June. (Davis, July 15)

Pennsylvania: Stem rust has been observed only in a section in Cumberland County near escaped barberry bushes. This rust occurred in five fields just south of Carlisle on June 29. No other stem rust was observed in any wheat field in the other eleven counties where wheat fields have been surveyed. (Kirby, July 10)

Virginia: Very severe in Washington County this season. (Wingard, July 15)

Wisconsin: Rust developing rapidly during the hot weather and rains. Less rust where barberry eradication has been complete. Wheat strain of rust has been starved out in some areas due to local abandonment of wheat for a few years. (Vaughan, July 15)

REPORTS ON LEAF RUST (PUCCINIA TRITICINA) OF WHEAT

Pennsylvania: In the southern and eastern part of the state this rust has been the most destructive for several years. It killed the leaves of the wheat plants and 60 to 95 per cent infections were common. First observed at Millerstown, Perry County, May 18. In the northern and western part of the state the infection is considerably less. (Kirby, July 10)

West Virginia: The continued coolness of the weather has undoubtedly kept this disease in check. The majority of fields show only a scattered infection. In the eastern panhandle a severe flecking of the upper leaves would indicate the possibility of damage to the crop should warm weather set in before the crop matures. (Archer, July 1)

SEED TREATMENT REDUCES AMOUNT OF BUNT (TILLETIA SPP.)

Pennsylvania: In untreated fields this smut is still very destructive. First observed at State College on June 8. Maximum found in one untreated field 61 per cent. In fields treated with (50 per cent copper content) copper carbonate dust it is almost impossible to find even a single smutted head. (Kirby, July 10)

Virginia: Treatment of seed with copper carbonate has reduced the amount of covered smut of wheat to negligible proportions in fields so treated. In Loudoun, Prince William, Rockbridge, Augusta and Rockingham Counties only occasional fields showed more than traces of infection. In Shenandoah County six out of eleven fields had the disease in amounts ranging from 0.75 to 8 per cent. (H. R. Angell, July 1)

Iowa: Bunt is present in western Iowa. One field had 14 per cent, another one 4 and still others a trace to 2 per cent. (R. H. Porter, July 10)

Colorado: Causing about five per cent loss in the Arkansas River Valley in some fields where no treatments were used. (LeClerg, June 21)

HELMINTHOSPORIUM FOOT ROT OF WHEAT IN COLORADO

"Dr. Hurley Fellows came out here last week and examined our winter wheat. He confirmed my statement that we had foot rot (Helminthosporium sativum) causing a greater part of the loss.

"In Weld County the loss is estimated at between 25 and 30 per cent. The disease is known to be present in all the dryland sections of the state and is causing about the same damage. The loss in individual fields ranges from 60 to 100 per cent. Very few fields are good enough to harvest and a great many are being plowed now.

"Only the early planted winter wheat has been damaged. Foot rot has not been found in a single irrigated farm." (LeClerg, June 30)

SCAB (GIBBERELLA SAUBINETII)

Pennsylvania: Due to continued wet weather after the wheat headed out this disease is very severe in all parts of the state. This disease was first observed near Chambersburg, Franklin County, on June 20. By the first week in July nearly 10 per cent of the spikelets of the wheat in the southeastern part of the state were infected. (Kirby, July 10)

Virginia: Scab infection varies from mere traces of the disease to occasional cases of 5 per cent infection. (H. R. Angell, July 1)

Missouri: Scab infection is very light in Missouri compared with 1927. This is largely to be attributed to the very dry spring months (April and May). The rainfall and temperature records seem to be closely correlated with scab infection in this section. (Scott, July 1)

Iowa: Scab is more prevalent than for a number of years. Barley and wheat in western Iowa are suffering most but oats show a trace to 2 per cent. (R. H. Porter, July 10)

LEAF RUST AND STERILITY ON OATS IN ARKANSAS

"Leaf rust (Puccinia coronata) very severe on certain late maturing spring oats. The following percentages of loss in yield were calculated: Arkansas Selection 744, 10; Iowa 105, 10; Iogren, 3; Oklahoma Red Rust Proof, 5; Fulghum, 10. Earlier maturing varieties do not seem to have any more leaf rust than in average years, in spite of the large number of rainy days.

"Sterility (cause unknown). Varying quantities of this malady, in the form of partly blasted panicles, have been observed in spring oats, some varieties suffering more than from all other diseases combined. Among others the following losses in yield have been independently estimated by two observers: Kherson, 3 per cent; Richland, 2 per cent; Gopher C.I. 2027, 1 per cent; Swedish Select, 5 per cent; Nebraska Burt, 5 per cent; Iowar C.I. 847, 3 per cent; Iogren, 3 per cent; Nebraska 21, 5 per cent. It seems reasonable to assume that the extreme wetness of soil and atmosphere may have had something to do with this. (Rosen, July 1)

BACTERIAL WILT FOUND ON CORN IN IOWA

"Bacterial wilt or Stewart's disease (Aplanobacter stewartii) appeared for the first time in Iowa on sweet corn in three counties, namely, Wayne, Appanoose and Lee. Other areas may be infected but to date no reports have been received. In Wayne County it is estimated that more than 50 per cent of the sweet corn is dying. We are attempting to find the source of the seed and determine if it was introduced in one lot of seed furnished by a canning company.

"Benefits from seed treatment are less than in 1927 as evidenced by stand counts in about 80 field plots. This is no doubt due to the high quality of seed corn planted this year and to the exceptionally favorable conditions prevailing at planting time." (R. H. Porter, July 10)

CERCOSPORA LEAF SPOT OF ALSIKE CLOVER TROUBLESOME IN NEW YORK

"Cercospora zebrina was found during last week of June and first week of July to be a serious disease producer in eastern New York. It was found generally distributed and it caused a loss of probably 5 per cent of the foliage, possibly more. In some fields it was attacking 30 to 40 per cent of the leaves." (J. G. Horsfall, July 15)

ALFALFA CROWN ROT AND WILT IN IOWA

"Crown rot (undetermined) and wilt caused by Aplanobacter insidiosum are both prevalent this year. It is probable that the lack of snow plus extremely variable temperatures during the winter aided the increase of both these diseases. Wilt was found in eastern Iowa for the first time this year." (R. H. Porter, July 10)

APPLE SCAB (VENTURIA INAEQUALIS)

Massachusetts: I have been especially interested in the infection of trees: Crataegus sp., Malus sp. (wild) and Malus sp. cultivated but located in forests and wooded tracts.

The Fusicladial stage is the worst on leaves of the above that I have seen in the last 5 years. I saw trees near Lyden, Mass., where leaf fall had begun. (Davis, July 15)

Connecticut: First seen May 16 and has come on very prominently on both unsprayed and even some sprayed orchards, especially on McIntosh. Looks like worst infection of recent years. (Clinton, July 15)

New York: Reports from field men of the State College of Agriculture indicate continued increase in prevalence.

Virginia: Apple scab has developed rapidly during June as a result of heavy rainfall and cool weather. The Winchester section is notably free from scab but the lower sections of the Valley of Virginia will probably suffer greater losses this year than in any year since 1924. A very heavy secondary infection appeared about July 6. (Schneiderhan, July 15)

Scab infection is rather scarce in southwestern Virginia again this season. The season has been cool and rainy. (Wingard, July 1)

Arkansas: Very abundant in unsprayed orchards and rather abundant in foliage in some sprayed orchards. Infection of fruit stems noted on unsprayed Delicious. (V. H. Young, July 1)

Ohio: The scab fungus disease is quite prevalent in southwestern part of state on apple leaves on account of abundance of rainfall. (Mendenhall, June 29)

Minnesota: First reported June 25. Both primary and secondary infections were found at this time. Infection light. First possible ascospore expulsion May 16 to 17. Light showers again June 10 to 11. Otherwise cool and dry up to week beginning June 17. Rained almost daily throughout week. Infections found probably dated back to June 10 to 11. (Sect. Pl. Path.)

BLIGHT (BACILLUS AMYLOVORUS) ON APPLE

Virginia: This disease is less prevalent than usual. Several striking instances of spreading this disease by careless pruning are in evidence at Berryville. (Schneiderhan, July 15)

Minnesota: Practically none in the state. A single specimen received through the mail. Observed first June 25, but only on three twigs of a Strawberry crab. Weather generally cool and dry up to week June 17. Rained throughout week. (Sect. Pl. Path.)

Utah: Blossom blight on the apple has been reported from practically all parts of the state and in some cases will seriously decrease yield. In a few orchards in Boxelder and Weber Counties the trouble has become so severe as to discourage further culture of the orchard for the season. (Richards, June 25)

APPLE RUST (GYMNOSPORANGIUM JUNIPERI-VIRGINIANAE) UNUSUALLY PREVALENT IN SOME SECTIONS

Connecticut: Very common. Have seen some of the worst infected trees in years. More or less complaint. (Clinton, July 15)

New York (Greene Co.): Cedar rust infection is unusually severe this year. Most varieties of apples are affected. Counts on McIntosh on June 27 ran as high as 65 per cent near cedars. Those a mile away from cedars only had 9 per cent infection. A count on dropped fruit near cedars showed 47 per cent had rust spots. Rust spots on McIntosh leaves are beginning to die out. An occasional cedar rust lesion is found on pear leaves. (A. S. Mills, July 2)

(Columbia Co.): There is an unusual infection of cedar rust this year. (A. B. Buchholz, July 9)

Virginia: Cedar rust is not severe in those areas in which the cedar trees have been cut. In the Cedar Creek - Strasburg section, the heaviest infection during the past six years has been observed. The lesions on York leaves are so numerous that the leaves are solid yellow in appearance. No infection was observed on leaves of Northwestern Greening in the same orchard. (Schneiderhan, July 15)

Arkansas: Very abundant on foliage and considerable amounts on fruit of some varieties. Promises to be a severe cedar rust year. (V. H. Young, July 1)

Minnesota: A few reports through the mail. Some of specimens heavily infected. Received specimen of cedar gall with extruded spore horns, May 20. Rained May 16 to 17. First chance for infection was at this time. Trees were in pink to full bloom stage. (Sect. Pl. Path.)

OTHER REPORTS ON DISEASES OF APPLE

Blotch (Phyllosticta solitaria)

Virginia: Very severe in poorly sprayed Northwestern Greening trees. This disease is not very important in Virginia because it is limited to a few susceptible varieties. (Schneiderhan, July 15)

Spray injury

Virginia: Spray burn particularly on Ben Davis and Grimes has caused serious losses in Virginia orchards in the past few years. The use of lime-sulfur and lead arsenate in combination during hot weather has been the main cause. The use of an excess of lime in this combination spray has largely eliminated spray burning. (Schneiderhan, July 15)

Arkansas: Spray injury from Bordeaux probably more common than usual. Wet weather favoring this trouble. Also some reports of early lime-sulfur injury - "spraying fruit off the trees." (V. H. Young, July 15)

BACTERIUM PRUNI DAMAGES SOUTHERN PEACHES

In the Sandhill sections of North and South Carolina and in some Georgia orchards Bacterium pruni is causing considerable damage. The Elberta variety seems to be most seriously attacked although other varieties such as Carman, Hale, and Early Rose are also affected. The injury is most prominent on the leaves. In some orchards more than half of the leaves are on the ground. A considerable percentage of Elberta fruit in infested orchards also are so seriously spotted as to be unmarketable. Cankers on new shoots of infected trees are common. Another type of injury is the killing or non-development of the fruit buds for next year.

In one 20-acre block of Elbertas near Cheraw, South Carolina, the trees showed 25 per cent defoliation. Seventy per cent of the leaves remaining on the trees showed infection, the thirty per cent uninfected leaves being the new growth

at the tips of the shoots. The trees seemed to be most heavily infected on the southwestern exposure as shown by spots on the surface of the fruit and the defoliation. Dissemination of the organism by wind was indicated. This disease presents an important problem to peach growers in the Carolinas. (R. J. Haskell and R. F. Poole, July 10)

REPORTS ON CHERRY LEAF SPOT (COCCOMYCES HIEMALIS)

New York: Mr. W. D. Mills reports this disease quite prevalent in the state, excepting where the "calyx" and "shuck" spray applications were made. These early sprays seem to have been necessary for the control of the disease this year. (Chupp, July 15)

Arkansas: Very abundant and already causing defoliation, especially on English Morello. Wet weather has prevented proper spraying. (V. H. Young, July 1)

Ohio: The leaf spot is quite prevalent on cherry leaves in Montgomery County and southeastern Ohio, and does considerable damage to cherry trees. (Mendenhall, July 6)

Illinois: Not as severe as last year and where trees have been sprayed not at all serious. Worse than during normal year but started later than usual. (H. W. Anderson, July 1)

OBSERVATIONS ON CANE BLIGHT (BOTRYOSPHAERIA RIBIS) OF CURRANT

Dr. Neil E. Stevens of the Office of Fruit Diseases has sent in the following report:

"The most interesting observation I have made this year is the condition of the currants in the Hudson Valley. In an observation trip June 24, which extended from Kingston to Newburgh and included the towns of Highland, Milton, and Marlborough, New York, I saw less than ten dead canes and these proved to have been killed by borers or mechanical injury. Currant cane blight is at the present time practically unknown in this region where it has attracted most attention and where practically all

the work ever done on the disease has been carried out. I am inclined to attribute this to the unusually cool springs and summers which have prevailed for the past several years. The currant plant, as shown by its growth in Canada and Alaska certainly thrives in cool weather and if, as now seems probable, the currant cane blight fungus is really a native of the tropics it may well be hindered by these cool seasons."

LATE BLIGHT (PHYTOPHTHORA INFESTANS) ON POTATO IN CONNECTICUT AND NEW YORK

Connecticut: On July 11 we found the late blight on the lower leaves in an Irish Cobbler potato field in Woodmont. It occurred only on the lower leaves of plants which were otherwise healthy. These leaves had all been in touch with the ground, showing that infection came from zoospores which had been developed through the tubers, thus confirming my theory that this is the ordinary method of primary infection.

This is the earliest we have ever found potato blight in this state, and if the weather conditions keep on for the rest of the month and August like they have in the past two months great damage will be done to the crop. (Clinton, July 11)

New York: During the potato tour on Long Island, June 27-29, late blight was reported as present both in Nassau and Suffolk Counties. (Chupp, July 15)

(Suffolk Co.): Late blight is beginning to show up to a considerable extent on both Cobblers and Green Mountains. (W. D. Been, July 9)

(Wayne Co.): Late blight infection has been found but is not general. (E. E. Frane, July 9)

DOWNY MILDEW (PLASMOPARA HUMULI) REPORTED ON HOPS IN NEW YORK

Downy mildew of hops has been reported in this country only from Wisconsin.

"Specimens were sent to the laboratory by the county agricultural agent from the Bavarian Hop farm at Cooperstown, Otsego County. This seems to be the first report from the state. Dr. F. M. Blodgett made the determinations."(Chupp, July 15)

BACTERIAL CANKER OF TOMATO (APLANOBACTER MICHIGANENSE) IMPORTANT IN UTAH

"This disease has already made its appearance in a serious form in the tomato fields of Utah and Davis Counties while the trouble appears less severe than last year it is evident that serious losses will result." (Richards, June 25)

OTHER REPORTS ON DISEASES OF VEGETABLE AND FIELD CROPS

Cucumber mosaic in Virginia

"The attempts to control cucumber mosaic by eradication of pokeweed in the vicinity of six demonstration fields in Norfolk County have given very satisfactory results in all but one field. Pokeweed infected with mosaic and a few infected cucumber plants were found on June 20 at one end of this field. On July 6, 15 per cent of the plants in the adjoining two acres showed symptoms of the disease, whereas at the opposite end of the field all of the plants were apparently healthy." (H. R. Angell, July 15)

Root rot (Fusarium sp.) of bean in Virginia

"Root rot is very destructive in home gardens at Pennington Gap, Virginia. Beans have been grown year after year on same soil." (Wingard, July 15)

Root rot (Aphanomyces euteiches) of peas in Wisconsin

"Root rot is developing rapidly in the central canning area, evidently increased by rain and hot weather. Rotation seems to be the only practical control." (Vaughan, July 15)

Bacterium malvacearum on cotton in Texas

"Epidemic outbreak of angular leaf spot and boll rot in the lower Rio Grande Valley and Nueces County. Thousands of acres involved. (Taubenhaus, July 1)

FUSICLADIUM SALICIPERDUM (LEAF ROT) ON WILLOW

The occurrence of this disease in this country was reported for the first time last year. (Pl. Dis. Reptr. 11: 87-88. Aug. 1, 1927).

"Besides Connecticut, New Brunswick, and Nova Scotia where the senior writer saw the disease last year causing severe injury, it has been found by him this year doing even more damage in Connecticut, Massachusetts and New Hampshire and is also reported from New York. Found on Salix nigra, Salba var. vitellina, S. cordata and possibly on S. sericea. The fungus has been obtained in cultures and inoculation experiments have proved beyond doubt that it is the cause of the trouble. Spraying experiments with Bordeaux mixture and lime-sulfur have apparently shown that the trouble can be controlled if four treatments are given, the first on the dormant buds in April and the last on the fully developed leaves in early June." (Clinton & McClintock, July 15)

GNOMONIA VENETA ON SYCAMORE AND OAK

Connecticut: Common on sycamore, perhaps more than usual, though bad the last few years. (Clinton, July 15)

West Virginia: Sycamore trees are found to be infected rather generally throughout the state, however, the damage was severe in no case. (Archer, July 1)

Ohio: Disease general on both oak and sycamore. Symptoms of disease first noted 10 days after a week of rains extending over period June 3 to 9. (Curtis May, July 1)

Illinois: Reported as serious on oak in northern Illinois as early as June 10. Becoming a very destructive disease on estates in northern part of state. (H. W. Anderson, July 1)

OTHER REPORTS ON TREE DISEASES

Poplar canker (Dothichiza populea) in Ohio

"Severe infection on one variety of Chinese poplar (Populus sinensis) in arboretum of Ohio Agricultural Experiment Station. Cankers on trunk and killing of smaller limbs and branches. P. simoni immediately adjoining not infected." (Curtis May, July 1)

Leaf rot (Fusicladium tremulae) on poplars in New England

"Found by the writer more or less common in New Hampshire, Massachusetts, and Connecticut on P. tremuloides, and also on P. grandidentata in Connecticut." (Clinton, July 15)

Leaf rust (Peridermium acicolum) on red pine in Connecticut

"Reported a couple of years ago on this host from this state. It has been found this year more abundant than ever before. (Clinton, July 15)

Needle blight (Lophodermium pinastri) on pines in Ohio

"Almost total defoliation of lodgepole pine in Ohio Agricultural Experiment Station arboretum. Disease noted two years previous to above date. Defoliation increasing since that time. Himalayan pine adjoining not infected. (Curtis May, July 1)